

March 17, 2011



U.S. Department
of Transportation

East Building, PHH-30
1200 New Jersey Avenue S.E.
Washington, D.C. 20590

**Pipeline and Hazardous
Materials Safety Administration**

DOT-SP 11850
(EIGHTH REVISION)

(FOR RENEWAL, SEE 49 CFR § 107.109)

1. GRANTEE: (See individual authorization letter)
2. PURPOSE AND LIMITATION:
 - a. This special permit authorizes an alternative inspection program utilizing acoustic emission (AE) testing in lieu of that required in § 180.205 for certain DOT specification and non-DOT specification cylinders used as components in aircraft fire suppressant systems. This special permit provides no relief from the Hazardous Materials Regulations (HMR) other than as specifically stated herein. The most recent revision supersedes all previous revisions.
 - b. The safety analyses performed in development of this special permit only considered the hazards and risks associated with transportation in commerce.
 - c. Unless otherwise stated herein, this special permit consists of the special permit authorization letter issued to the grantee together with this document.
3. REGULATORY SYSTEM AFFECTED: 49 CFR Parts 106, 107 and 171-180.
4. REGULATIONS FROM WHICH EXEMPTED: 49 CFR § 172.301(c) in that the marking requirements are waived; 180.205(c), (f), (g) and 180.215(b)(2) in that the acoustic emission test is performed in place of the hydrostatic test and the internal visual inspection.
5. BASIS: This special permit is based on the Pipeline and Hazardous Materials Safety Administration's (PHMSA) editorial review under § 107.121 initiated on December 4, 2008.

March 17, 2011

6. HAZARDOUS MATERIALS (49 CFR § 172.101):

Hazardous Materials Description			
Proper Shipping Name	Hazard Class/ Division	Identification Number	Packing Group
Fire Extinguisher	2.2	UN1044	N/A

7. SAFETY CONTROL MEASURES:

a. PACKAGING - Packaging prescribed is a DOT 4DA or 4DS specification cylinder, or a cylinder manufactured in accordance with DOT Special Permit SP-5861, SP-6071, SP-7026, SP-7945 or SP-8495 that is fabricated from a stainless steel, Nitronic 40 alloy, 4130 steel or titanium used as components of aircraft fire suppression systems, having maximum service pressure of 900 psi. The cylinder contains Bromotrifluoromethane R13B1, 2.2, UN1009. In lieu of the hydrostatic pressure test and internal visual examination prescribed in § 180.205(c), (f), and (g), each cylinder must be examined in accordance with the test procedures specified in the application for special permit on file with the Office of Hazardous Materials Special Permits and Approvals (OHMSPA) and as prescribed in this special permit.

b. TESTING: Each cylinder must be externally inspected in accordance with § 180.205(f) and meet the requirements of this section before being AE tested. The AE processor threshold level must be set at not greater than 25 dB. A cylinder fails when any of the following occurs:

(1) A cylinder has a cluster containing 35 or more events. A cluster is defined as all events located within a circle on the sphere which has a radius equal to 15 degrees of arc of the great circle (0.262 times the radius of the sphere) of the sphere; or

(2) A cylinder which has a cluster containing 18 or more events and has a ratio, R, equal to 3.0 or greater. The ratio R is defined as following:

$$R=N2/N1$$

March 17, 2011

N1 = number of events which occurred in the temperature range of 110° F to 130° F

N2 = number of events which occurred in the temperature range of 130° F to test temperature (a temperature which corresponds to the minimum required test pressure for AE testing).

A cylinder which fails the visual inspection or the AE test, must be removed from service and stamped condemned as specified in § 180.205(i).

c. Equipment performance: The AE test equipment must be automated and capable of performing the following:

- (1) Pre and post system calibration using automated sensor testing (AST).
- (2) Starting and stopping the oven for proper pressurization of the cylinders during the test cycle.
- (3) Initiation and termination of the test cycle.
- (4) Collecting and analyzing the AE events during the test.
- (5) Determination of acceptance or rejection of a cylinder in accordance with the AE test criteria specified in paragraph 7.b. and the ATA application for special permit on file with OHMSPA.

d. Personnel Qualification: Each person who performs retesting, and evaluates and certifies retest results must meet the following qualification requirements:

- (1) Project Manager/Director of Product Technology - is the senior manager of ATA responsible for compliance with DOT regulations including this special permit.

Additionally, the project manager must ensure that each operator and senior review technologist maintains the required certifications described herein.

- (2) The personnel responsible for performing cylinder retesting under this special permit must be qualified to an appropriate Ultrasonic Testing Certification

March 17, 2011

Level (Level I, II or III) in accordance with the American Society for Nondestructive Testing (ASNT) Recommended Practice SNT-TC-1A depending upon the assigned responsibility as described below:

(i) System startup and calibration must be performed by a Level II operator. A Level II operator may review and certify test results. However, written procedures for accepting/rejecting a cylinder must be provided by the senior review technologist. Based upon written criteria, the Level II Operator may authorize cylinders that pass the retest to be marked in accordance with paragraph 7.h of this special permit. A person with Level I certification may perform a system startup, check calibration, and perform ultrasonic testing under the direct guidance and supervision of a Senior Review Technologist or a Level II Operator, either of whom must be physically present at the test site so as to be able to observe testing conducted under this special permit.

(ii) Senior Review Technologist (SRT) - is a person who provides written UE procedure, supervisory training, examinations (Level I and II) and technical guidance to operators, and reviews and verifies the retest results. A SRT must have a thorough understanding of the DOT Regulations (49 CFR) pertaining to the requalification and reuse of DOT cylinders that are authorized under both this special permit and ASNT Recommended Practice SNT-TC-1A and must possess either:

- A. A Level III certification from ASNT in Ultrasonic Testing; or,
- B. A Professional Engineer (PE) License with a documented experience for a minimum of 2 years experience in Non-Destructive Evaluation (NDE) of pressure vessels or pipelines using the ultrasonic examination technique; or,
- C. A PhD degree in a discipline of Engineering/Physics with documented evidence of experience in Non-Destructive Evaluation (NDE) of pressure vessels or pipelines using the ultrasonic examination technique or research/thesis work

March 17, 2011

and authoring/co-authoring of technical papers published, in recognized technical journals, in the fields of ultrasonic testing methods.

- D. The SRT must prepare and submit the reports required in paragraphs 7.i. and annually verify that the UE program is being operated in accordance with the requirements of this special permit.

The most recent copies of certification (e.g. ASNT Level III, P.E.) must be available for inspection at each requalification facility.

8. SPECIAL PROVISIONS:

a. USE: Persons may use the cylinders tested in accordance with the terms of this special permit for the transportation of those hazardous materials identified in paragraph 6 of this special permit provided no modifications or changes are made to the packages, all terms of this special permit are complied with, and a current copy of this special permit is maintained at each facility from which such reoffering occurs.

b. MARKING:

(1) The exterior of each cylinder passing retest under the provisions of this special permit must be marked as prescribed in § 180.213(d) and as required in the original manufacturing specification or manufacturing special permit. In addition, each cylinder must be marked with the letters AE following the year of the retest (example 01 xx 98 AE).

(2) The marking requirements of § 172.301(c) are waived.

c. APPROVAL OF AE FACILITY: Each retest facility for AE testing must be approved as provided in Subpart I of Part 107 of the HMR except that staff of OHMSPA will perform the functions of the IIA until such time as OHMSPA determines that qualified IIAs can assume the function.

March 17, 2011

9. MODES OF TRANSPORTATION AUTHORIZED: Cylinders retested under this special permit may be transported by the modes authorized in the manufacturing specification or manufacturing special permit subject to the restrictions applicable to the hazardous material being transported.
10. MODAL REQUIREMENTS: The modal requirements are the same as set forth in the manufacturing specification or manufacturing special permit subject to the restrictions applicable to the hazardous material being transported.
11. COMPLIANCE: Failure by a person to comply with any of the following may result in suspension or revocation of this special permit and penalties prescribed by the Federal hazardous materials transportation law, 49 U.S.C. 5101 et seq:
 - o All terms and conditions prescribed in this special permit and the Hazardous Materials Regulations, 49 CFR Parts 171-180.
 - o Persons operating under the terms of this special permit must comply with the security plan requirement in Subpart I of Part 172 of the HMR, when applicable.
 - o Registration required by § 107.601 et seq., when applicable.

Each "Hazmat employee", as defined in § 171.8, who performs a function subject to this special permit must receive training on the requirements and conditions of this special permit in addition to the training required by §§ 172.700 through 172.704.

No person may use or apply this special permit, including display of its number, when this special permit has expired or is otherwise no longer in effect.

Under Title VII of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU)- 'The Hazardous Materials Safety and Security Reauthorization Act of 2005' (Pub. L. 109-59), 119 Stat. 1144 (August 10, 2005), amended the Federal hazardous materials transportation law by changing the term "exemption" to "special permit" and authorizes a special permit to be granted up to two years for new special permits and up to four years for renewals.

12. REPORTING REQUIREMENTS:

a. A listing of test facilities including the names of Senior NDT technicians and the names of "qualified testers" for each facility must be submitted to the Office of Hazardous Materials Special Permits and Approvals annually.

b. Each holder is required to report any incident involving packaging failure or loss of packaging contents, while in transportation, to the Associate Administrator for Hazardous Materials Safety (AAHMS) as soon as practicable. (Sections 171.15 and 171.16 apply to any activity undertaken under the authority of this special permit.) In addition, the holder(s) of this special permit must inform the AAHMS, in writing, of any incident involving the package and shipments made under the terms of this special permit.

Issued in Washington, D.C.:



for Dr. Magdy El-Sibaie
Associate Administrator for Hazardous Materials Safety

Address all inquiries to: Associate Administrator for Hazardous Materials Safety, Pipeline and Hazardous Materials Safety Administration, Department of Transportation, Washington, D.C. 20590. Attention: PHH-31.

Copies of this special permit may be obtained by accessing the Hazardous Materials Safety Homepage at http://hazmat.dot.gov/sp_app/special_permits/spec_perm_index.htm Photo reproductions and legible reductions of this special permit are permitted. Any alteration of this special permit is prohibited.

PO:MT/mn